REMARKS

This is responsive to an Office Action mailed on June 11, 2008. The Office Action rejected claims 1, 3-6 and 8-11. Applicant has amended claim 1. The Application currently includes claims 1, 3-6 and 8-11.

The Office Action rejected claim 1 under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Office Action objected to the claim language "such as". Applicant had amended the claim language to overcome the indefiniteness rejection and respectfully requests that the 35 U.S.C. § 112, second paragraph, rejection of claim 1 be withdrawn.

The Office Action rejected independent claim 1 as being obvious under 35 U.S.C. § 103(a) as being unpatentable over the combination of Hoffmann U.S. Patent No. 5,598,729 in view of Pollkoetter U.S. Patent No. 6,817,219. Applicant respectfully disagrees that independent claim 1 is obvious over the cited combination.

The independent claims relate to a process and forming machine which involve 1) measuring values of one or more coordinates of a position of an extreme edge of the workpiece during the deforming process and 2) changing a position and/or a shape of one or more of the deforming curves being passed through during the deforming process, the feeding rate and/or the rotational speed with which the tool and the workpiece are rotated relative to each other on the basis of said measurement or measurements.

Contrary to the allegations of the Office Action Hoffmann discloses neither of these recited elements. Rather Hoffmann discloses a preprogrammed device. A preprogrammed device does not disclose, suggest or render

obvious taking actual measurements of values of the position of the workpiece and changing the position and/or shape based upon the measurements as claimed.

Rather than taking actual measurements, Hoffmann discloses making calculations or predictions of the position of the forming tool based upon input parameters. As stated by Hoffmann:

> The present invention also provides a computer system for controlling a forming tool and a heating means for constricting a rotating tube. The computer system comprises a means for receiving input parameters; a means for calculating, based on the input parameters, the orientation and positions of the forming tool and the heating means for orchestrated movement of the forming tool and the heating means relative to the tube as the tube changes shape to constrict the tube; a means for displaying the information on the orientation and positions of the forming tool and the heating means; and a means for electronically communicating the calculated orientation and positions to means that move the forming tool and the heating means.

(Col. 3, line 57- Col. 4, line 2)(Emphasis added)

> Referring to FIG. 28, Delta 112 is the distance between path n+1 and n as measured perpendicular to the straight portion of path n, at the free edge of the tube. The Temporary Point 111 (which is a calculated intermediate point for estimating the arc length) for the next pass e.g. n+1, is located a distance Delta from pass n. One point 117 of the generally straight portion of the pass n+1 is then calculated so that the generally straight segment defined by this point and the Temporary Point is a tangent to the desired arcuate structure. The second point 113 is determined by extending this generally straight segment from the point 117 by an amount calculated to include the arc length, including predicted extension and the tag. Generally, the smaller the value of delta, the smoother will be

> the arcuate portion of the finished product. The selection of the value of delta is affected by operational constraints such as time, tube thickness, temperature and cost.

(Col. 16, line 65 – Col. 17, line 14)(Emphasis added).

> Referring to 30A-B and 31, which depict in relatively more detail portions of the paths traveled by a wheel-shaped forming roller in forming an arcuate end portion with a quarter elliptical cross section, the path of travel of a fixed point (e.g., center 116 of the semicircular arc cross-section of the periphery) of the forming roller 78 extends past the predicted free edge location (e.g., 108N) by an amount referred to as "tag" (also shown as 132 in FIG. 28). This accommodates any variance between the calculated and actual arc length. When the tube is constricted to the point approaching closure, to avoid contacting or otherwise interfering with the movement of the forming roller, instead of extending past a free edge of the tube, the inductive coil is positioned proximate the free edge with a clearance from the forming roller when the forming roller is at the tag position. As shown in FIG. 28, the tag is kept relatively constant for various lines of contact throughout the spinning operation. Generally, for a tank with a 16 inch diameter and 0.125 inch wall thickness we use a delta of about 0.15 inch and a tag of about 0.25 inch.

(Col. 16, lines 28- 47)(Emphasis added).

Therefore, Hoffmann clearly discloses a preprogrammed device to predict or calculate the position of the edge of the workpiece. A predicted value is not an actual measurement as claimed. Since a position of the extreme edge of the workpiece is calculated, it follows that the actual measurement is not actually measured. Since there is no actual measurement of the position, the actual measured position cannot be utilized to change a position and/or a

shape of one or more of the deforming curves being passed through during the deforming process, a feeding rate and/or a rotational speed with which the tool and the workpiece are rotated relative to each other as claimed. Therefore, Hoffmann does not disclose, suggest or render obvious elements 1 and 2 as discussed above.

Further, Hoffmann does not disclose or address the problem underlying the present invention as provided in the paragraph bridging page 2 and 3 and the fourth paragraph on page 2 of the U.S application as filed which are reproduced below.

> The length of the deformed portion of the workpiece can be corrected by measuring the position of the edge during the deforming process and adapting the feeding rate, i.e. the speed with which the tool moves along the workpiece, the rotational speed with which the tool and the workpiece are rotated relative to each other, and/or the position of the deforming curves being passed through during the deforming process, on the basis of said measurement. Although these three parameters are preferred, it is also possible to adapt the shape of the deforming curves over their entire length, or at least such that no locally reduced portions will be imposed on the deformed portion.
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> …
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> In many cases, the length of the deformed portion of semi-manufactured products obtained by means of this type of methods and forming machines will be different from the length that is required or desirable in connection with further operations to which the semi-manufactured product is to be subjected. To obtain the required or desired length, an additional operation must be carried out in that case, for example cutting the edge (or edges) of said semi-manufactured products to size.

The application discloses the importance of utilizing an actual measurement of the extreme edge of the workpiece, as is also recited in the claims. Hoffmann, which discloses utilizing a preprogrammed machine, neither discloses, suggests or renders obvious the claimed invention.

Pollkoetter was cited in the Office Action as disclosing contactless optical sensors that sense a free end of a blank and that axial and radial infeed of forming rollers are controlled by the measurement provided by the sensors. The Office Action concluded that it would have been obvious to one skilled in the art at the time of the invention to provide Hoffman with optical sensing of the free end as taught by Pollkoetter in order to provide the free end position to the controller for each forming curve.

Applicant respectfully disagrees that the combination of the Pollkoetter with Hoffmann is proper. Hoffmann clearly teaches calculating the position of the workpiece. Pollkoetter teaches utilizing an optical sensor. There is no reason to combine Pollkoetter with Hoffmann except for the claimed invention. A sensor would have no utility on the strucutre disclosure in Hoffmann because the position of the work piece is calculated, not measured. Therefore, Applicant submits that the combination of Hoffmann with Pollkoetter is improper and does not render claim 1 as obvious.

Assuming for the sake of argument that the combination of Hoffmann and Pollkoetter is proper, the combination still fails to render claim 1 obvious. While Pollkoetter discloses an optical sensor to sense a position of the work piece, Pollkoetter does not disclose the claim element of changing a position and/or a shape of one or more of the

deforming curves being passed through during the deforming process, the feeding rate and/or the rotational speed with which the tool and the workpiece are rotated relative to each other on the basis of said measurement or measurements. Pollkoetter does not disclose utilizing the measurement for controlling the disclosed system. Therefore, Pollkoetter does not cure the deficiencies of Hoffman.

As such the combination of Hoffmann and Pollkoetter does not teach or suggest all of the claim elements as required by MPEP § 2143.02. Therefore, claim 1 is not made obvious by the combination of Hoffmann and Pollkoetter. Reconsideration and allowance of claim 1 are respectfully requested.

Claim 6 was rejected as being obvious over the combination of Hoffmannn and Pollkoeter. Claim 6 recites 1) a control unit comprising a memory, wherein the control unit is arranged for controlling the tool during the deforming process at least on the basis of deforming curves, the feed rate and/or the rotational speed with which the workpiece and the tool are rotated relative to each other, which parameters are stored in the memory and 2) at least one detector configured to measure values of one or more coordinates of a position of an extreme edge of the workpiece and provide said measured values to the control unit. The detector and control unit measure the position of the workpiece and control the tool based upon the measurement of the position of the extreme edge of the workpiece.

For the reasons stated with respect to the allowability of claim 1, claim 6 is also in allowable form.

Reconsideration and allowance of claim 6 are respectfully requested.

Claims 3-5, and 8-11 are dependent from claims 1 or 6. These claims are believed separately patentable when the features recited in these claims are combined with the features of their respective independent claim, and the features of any intervening claims. In addition, since claims 1 and 6 are in allowable form, claims 3-5 and 8-11 are also in allowable form. Reconsideration and allowance of claims 3-5 and 8-11 are respectfully requested.

The foregoing remarks are intended to assist the Office in examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered exhaustive of the facets of the invention which are rendered patentable, being only examples of certain advantageous features and differences, which applicant's attorney chooses to mention at this time. For the foregoing reasons, applicant reserves the right to submit additional evidence showing the distinction between applicant's invention to be unobvious in view of the prior art.

Furthermore, in commenting on the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the same and the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims.

For the foregoing reasons, Applicant submits that the present application is in allowable form. Allowance of the present application is respectfully requested.

A petition for an extension of time for consideration of this amendment is hereby requested. An online charge authorization for the extension of time fee is provided with herewith.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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